DIGITAL MEDIA MANAGEMENT FOR CULTURAL RESEARCH INITIATIVES

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ABSTRACT

Key concepts covered in this research project include an understanding of digital media management, defining and building a representation of cultural research initiatives, and determining best practices for applying the two aforementioned terms together respectively. Information obtained through literature review, document analysis, and peer review, and small-batch testing for digital media management strategies and organization structures will be applied to the ChinaVine archive. ChinaVine's archive is a practical environment for applying learned digital media management methods. The outcome of this research will be an organized archival environment for ChinaVine's digital media. The digital media in questioned is managed on the a Drobo external storage device at the University of Oregon and the University of Central Florida.

KEYWORDS

Digital Media Management, Archive, Arts and Culture, Metadata, ChinaVine.org

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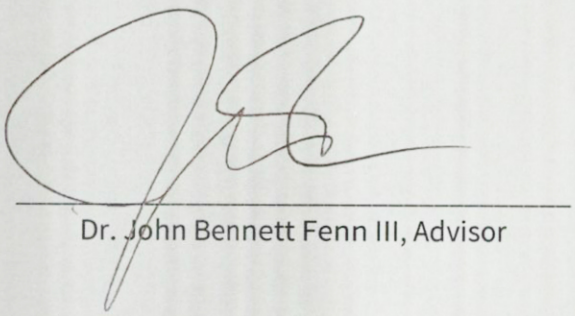

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Introduction

There is a problem amid the vast sea of digital information. Humans continue to develop organizational systems for processing great amounts of digital information. Until the 20th century, none of this information existed in a machine-readable form. While the abacus and Atanasoff–Berry computer hold and process digital information, networked machines with large-scale storage and processing capabilities were not realized until the 1960s. This research project discusses organizational systems and strategies for digital media in an example of such a networked environment. The ChinaVine archive at the University of Oregon is used to demonstrate practical applications of the literature cited throughout this paper.

What does the contemporary and historical definition of an archive mean within this digital environment? What sorts of changes will be required for archives to remain important for

preservation and documentation? How does the intangible nature of much digital media affect the austere and solidified nature of archival materials? Myriad literature exists on the nature of media boundaries in a digital or virtual environments. Much of the literature points to the dematerialization of such boundaries (McLuhan, 1964, 1967; Berners-Lee, 1989; Robins, 1999; Bakardjieva, 2003; Varnelis, 2012), while a few authors allude to a conservation of separation and even a “Tragedy of the Commons” (Hardin, 1977; Robins, 1999). Although digital boundaries are constructed, these are bypassed frequently and easily with tools such as the Tor network, Freegate, and virtual private networks.

The aforementioned questions influence large portions of this research project. Digital materials must be archived as physical documents on paper must be archived for the sake of posterity, preservation, and future knowledge. Some individuals working with an archive or library during the 20th century, whether they identify themselves as an archivist or not, argue that many physical archives are in a state of neglect and underuse (Seeger, 1986). Yet what do these individuals expect when often times an archive is confined behind academic barriers? How is the common individual situated outside academia to access many archival holdings and collections of knowledge? Among others (Harris, 2002; Ruskin, 2006; Vallier, 2010), Seeger (1986, 2004) advocates the expanded use of archival collections into physical and virtual space.

Many benefits come with archiving digital media. For example, the ability to implement a

relational database on to a set of digital media allows researchers to rapidly find many pieces of content by entering key search terms rather than thumbing through thousands of files (Bachmann, 2010). However, in order for this type of benefit to be successful rather than a hindrance, the digital media / assets must be coherently organized. Unlike a physical document that can be identified by handling and examination, the digital item may be unidentifiable without separate, specific metadata. A relational database is useless without computer-readable documentation (Chagoya, 2010).

The key delimitation of this research project is working within the ChinaVine project. All of the digital media management strategies tested throughout this research project are tested on small batches of ChinaVine's born-digital fieldwork captured between 2007 and 2012. ChinaVine was established in 2006, with the first fieldwork and research trip in 2007. ChinaVine was inspired by a project titled FolkVine, which captured Floridian folk life and culture and showcased the findings in through digital media. ChinaVine's mission is to educate English-speaking/reading children, youth, and adults about China's cultural heritage. This mission is achieved through this interactive website along with a variety of social media platforms. The primary medium for ChinaVine's educational, anthropological content is its interactive website, http://chinavine.org (http://chinavine.org, 2012).

Currently, work is underway to copy a meaningful collection of ChinaVine's media to the Digital Scholarship Center at the University of Oregon. The process or transferring and

reorganizing information will be discussed in sections four and five of this paper. Leading up to the work at the Digital Scholarship Center, a number of strategies were tested on small batches of media from ChinaVine's collection. The purpose of these tests included the most effective means of collecting and managing large amounts of digital media produced by contemporary recording devices in the field. Two sessions of fieldwork in China with similar media management strategies will be discussed, with a comparative analysis on the differences when collecting media in the field and in the library.

Keywords

There are numerous critical terms that require definition in order to stand on level ground throughout the remainder of the proposal. How can a project be successfully proposed without common semantics? The following terms are grouped in such a way that allows for definition combinations. For example, Digital Media Management can be defined both as a single concept and three separate terms. This applies to subsequent definitions as well.

(Born) Digital / Media / Management

Cultural / Research / Initiative

Recording / Archival Science / Archive

Metadata / Standards / Organization

A digital object is a series of digits (often consisting of binary or hexadecimal representation) represented in physical quantity by magnetic polarization or voltage. Practically defined, the physical spacial capacity for magnetically oriented bits on a hard disk drive determines amount of available digital storage space. Denoting a digital object as born digital means the object never existed in an analog form (e.g., a picture taken on a digital single-lens reflex camera recorded directed to a non-volatile memory card). Arthur (2005), Krogh (2006), Van Niekerk (2006, 2007), and Wactlar & Christel (2000) all discuss digital media management in various professional capacities. In many instances, the term 'asset' is replaced with 'media', depending on the author's background and professional experience. This differentiation is explored further when examining the differences and respective missions of the *Journal of Digital Asset Management* versus the *Journal of Digital Media Management*. Given the definitions of 'asset' and 'media', it seems asset's connotation includes intellectual property and other forms of digital/physical property that possibly generates profit. Media, on the other hand, does not necessarily generates a profit for an organization or company (Krogh, 2006; The Free Dictionary, 2012). For example, an amateur photographer may still care about digital management, but they may not manage photographs as assets in the same manner as an advertising firm.

A media example from ChinaVine that is not born digital are the journal transcriptions, photographs, and sketches donated to ChinaVine from Barney and Loye Barnard for digital publishing. The first set of original media in this collection is found at on the ChinaVine

website at the following link: http://chinavine.org/2011/08/12/barney-loye-zhengzhou/. A large portion of the media from Barney and Loye is generated from scanned original images and documents, then saved into a computer and posted on the website. The journals are transcribed and published along with the materials as well.

A more current but similar example of physical media digitalized into a machine-readable format for a specific purpose are the Wheaties boxes used for an installation at the Jordan Schnitzer Museum of Art (JSMA). The process for converting these physical creations into a digital object, then back into a physical piece for fit on a wall in a museum explored the various relationships between born digital objects and those of a naturally physical nature. This involved scanning a digital copy of the physical boxes purchased from eBay with equipment from the University of Oregon Library. After the boxes were delivered to the University of Oregon, they are scanned by Images Services in the Knight Library at the University. Following the scanning process, the boxes were then processed as a digital file with Adobe Photoshop. Ultimately, the boxes were physical, then digitally enlarged without losing ay detail, and then made physical once again after appropriate edits were made for the museum's copy.

Turning to culture, research, and initiative, the ChinaVine project falls into each of three terms both separately and together. Contemporary educational technologies rapidly emerge in the contemporary pedagogical environment on a regular basis. Many students who find

interest in subjects outside of the standardized curriculum for K-12 classes in the United States may seek out information through various internet websites, extracurricular activities, and events in the world around them. Examples of public sources of information existing online include Codecademy, Khan Academy, TED talks, MIT's OpenCourseware, and ChinaVine. While any of these resources may be used in an official, normalized classroom environment, budding learners may not be exposed to them in such a place, and thus seek out the information on their own (Jenkins, 2006; Boyd, 2008). If this research project were conducted previous years, an interjection about the differences of Eastern and Western culture may be inserted here, but the global nature of virtual, online culture continues to dematerialize older, socially constructed boundaries.

Utilizing language such as “cultural research initiative” is a key delimitation in the research project, and also a possible limitation. ChinaVine is perhaps the most specifically culturally oriented educational resource out of the aforementioned examples. That is, Codecademy explicitly provides lessons for computer programming, Khan Academy originally focused on mathematics and sciences, TED lectures cover a wide array of topics, and MIT's OpenCourseware mostly mirrors courses provided at MIT. Much of the content on ChinaVine focuses on cultural heritage, folklore, and traditional Chinese customs, thus defining itself as an initiative for cultural research, rather than initiative to publish materials and lectures from undergraduate and graduate courses online. ChinaVine is unique in that not many other examples exist of educational content created in an exceptionally digital environment from

this perspective. Due to this reasoning, the digital media management strategies employed by ChinaVine will be different from that of, for example, OpenCourseware. Rather than being defined and organized by broad academic topics and specific terminology, much of ChinaVine's digital media is organized by descriptors determined by visual representation of the collected fieldwork (e.g.: recorded colors, actions, behaviors, and specific people).

'Archive', 'archival science', and 'recording' are all specifically related to each other regarding their capacity for ChinaVine. Relying on strategies from many articles by professional archivists, anthropologists, and ethnomusicologists (Seeger, 1986; Harris, 2002; Vallier, 2010), ChinaVine's archive is a continually growing repository of containing the sum total of all ChinaVine fieldwork since 2007. ChinaVine's archive is a Drobo digital storage unit. In physical space, the Drobo is a smallish black box with a few indicator lights and a detachable face plate that sits on a desk and plugs into a computer. At the time of writing, ChinaVine's Drobo has a total storage capacity of four terabytes, with 2.61 terabytes of actual storage space. The remaining space is used redundantly for protection against data loss. Drobo's BeyondRAID technology is at the heart of what makes the Drobo system work for ChinaVine. According to Drobo's website, the Drobo system is “Built on an advanced virtualization platform, BeyondRAID chooses the correct protection algorithm based on data availability needs at any given moment” (Drobo.com, 2012). This technology allows the ChinaVine team to redundant record, organize, archive, edit, and publish digital media safely and securely. The Drobo's BeyondRAID technology automates management of digital media in the redundant storage

space. When the terms 'ChinaVine archive', 'Drobo', 'project archive', or other items related to small-batch testing on ChinaVine's media appear, it is either this Drobo or the sister Drobo at the University of Central Florida being discussed.

Metadata, standards, and organizational strategies are what is being tested on the ChinaVine archive in small batches. Throughout a literature review of the *Journal of Digital Asset Management*, metadata is thoroughly discussed and defined (Bargmeyer & Gillman, 2000; Chagoya, 2010; Gelzer, 2008; Hedden, 2010a; Krogh, 2006; National Information Standards Organization, 2004; Roszkiewicz, 2010). Bargmeyer & Gillman (2000) argue that the most defining aspect of metadata is specific use of data. That is to say all of the digital media in the ChinaVine archive contains contextual data not necessarily recognizable by examining video, photographs, audio recordings, or text samples. Such information possibly consists of technical information about the capture device (i.e., camera or audio recorder), descriptive information about location, time of day, date, and author, and administrative information, such as the location of specific content within the ChinaVine archive.

There are many metadata standards and organizational strategies for digital media. The way metadata is handled and how it affects digital media are components of archival science as a larger topic. By definition according to Harris (2002), the term 'archival science' is a 19th century Positivist paradigm wherein words like 'archives', 'archivist', and 'record' are stable, simple, and without contest. However, time progresses and technologies advance, thus

changing fundamentals and understanding of what was once thought to be unchanging.

Problem Statement

Fundamental changes in the nature of an archive and what such a thing contains are at the root of this research problem. The notion of an archive in a born-digital environment is not the historical notion of an archive prior to the second half of the 20th century (Seeger, 1986). What are humans to do with an explosion of digital information organized by different and numerous standards? How will this information be sorted, stored, and recorded? There is not a universal, unified system for organizing physical information and media, much less a similarly comprehensive system for digital information. Understanding and testing small batches of different systems for digital media management and organization specifically on the ChinaVine archive will address this problem specifically for cultural research initiatives managing digital media.

For individuals working within cultural research initiatives, digital disorganization causes many complications. One practical example of digital disorganization inherently resides in digital media management of a content group due to the fact that multiple contributors backup multimedia items into single hard-drive. Methods for organizing research-based digital media can alleviate such issues. Problems that arise from digital disorganization include information loss, delayed publication, and communicative confusion. If a researcher

needs to find a bit of content in an archive with over ten thousand photographs and hundreds of hours of documentary footage, but none of the information is specifically labeled, how long could this process take?

The ChinaVine archive is an example of digital disorganization. Since the project began in 2007, numerous researchers individually contributed content to the archive. Without a set standard for digital media organization and management, the individual researchers uploaded material however they thought worked best. In some cases this involved reorganizing media into labeled buckets of content, and in other cases this involved no organizational thought whatsoever. Many individual pieces of content are without the aforementioned metadata required by humans and computers to determine important contextual information even if they are unable to view the media in question.

Both situations regarding completely unlabeled, unorganized media and/or loosely labeled and organized media are dangerous when it comes to constructing a coherent digital media management system. The former presents potential confusion if there is no organized, standard method of organization. The latter presents the obvious problem of lacking any methodology or structure. One strategy to improve ChinaVine's organizational structure is tagging digital media with specific terms developed with a controlled vocabulary to improve metadata accuracy and research efficiency.

Resolving digital disorganization leads to efficient research, accessibility, and future proofing to the best possible potential. Personal experience with the ChinaVine project and other cultural endeavors demonstrates that many arts organization are not focused on digital media organization and management. This focus does not require additional proprietary resources – only knowledge or organizational standards and digital media management practices.

There are numerous ways to conduct small-batch testing of organizational structures and methods for implementing accurate metadata on content stored on ChinaVine's archive. Detailed explanation are contained within the research design as well as the data collection and analysis procedures of such methods and how implementation will benefit past, present, and future ChinaVine team members.

Conceptual Framework

Broad topical areas include digital archival science, digital storage and preservation, human-readable/searchable metadata, failed organizational methods and databases, and existing database structure including relational, hierarchical, object-based and network-based models (Bachmann, 2010; Bargmeyer & Gillman, 2003; Berners-Lee, 1989; Chagoya, 2010; Gelzer, 2008; Hedden, 2010a; Krogh, 2006; McIntyre, 2010; National Information Standards Organization, 2004; Roszkiewicz, 2010; Seeger, 1986, 2004; Solomon, 2010; van Niekerk,

2006). A poor organizational model leads to a loosely defined, unsearchable inventory of digital content. In turn, this results in researchers resorting to an inefficient hunt-and-peck method to find content and losing valuable time. At an even higher level, these broad topics allude to greater social issues regarding human interaction on an unprecedented global scale. These social issues navigate through complex ethical concerns regarding intellectual property, how individuals share cultural information and knowledge, and a practical, real-world representation of what free information means (Bakardjieva, 2003; Besek, 2003; boyd, 2008; Hardin, 2007; Harris, 2002; Jenkins, 2006; McLuhan, 1964, 1967; Robins, 1999; Vallier, 2010; Varnelis, 2012).

These broad areas are specifically related to ChinaVine as a real-world practical testing environment. ChinaVine's budget, like many other budgets, is limited. It is not within the project's budget to acquire special database management software and necessary resources for implementation. Models for practical testing must fit within these requirements (i.e., limited third-party software for media management). ChinaVine extensively uses the Adobe Creative Suite for content production. The Adobe Creative Suite includes Adobe Bridge, which is specifically used for manipulating and managing digital media. Bridge is well suited for ChinaVine due to being primarily useful for photographs, which is the bulk of ChinaVine's digital media. Digital video also makes up a large portion of ChinaVine's content, and is also manageable with the descriptive tagging functions and metadata editor within Adobe Bridge. However, it is not financially possible for the project to purchase multiple new media

management programs for testing. Instead, testing will be conducted withing the current operational means using existing software as well as open source alternatives.

Testing for ChinaVine content is strictly related to born-digital material. The processes and organizational methods, mostly related to technical metadata, would be very different if organizing physical media, such as film and recorded audio/video tape. Accurate administrative, technical, and descriptive metadata plays a key role in accomplishing the research. EXIF data provided by most devices covers the technical aspect, and testing formulaic organizational structures is critical to successful administrative and descriptive metadata.

The literature review includes articles from the *Journal of Digital Asset Management* (Bachmann, 2010; Chagoya, 2010; Hedden, 2010a; McIntyre, 2010; Roszkiewicz, 2010; Solomon, 2010), writings from Anthony Seeger on archival practice for sound recordings and ethnomusicologists (Seeger, 1986, 2004), and publications on current standards for digital media management, metadata, archival practice, as well as recording and preservation (Bargmeyer & Gilman, 2000; Besek, 2003; Gelzer, 2008; Harris, 2002; Krogh, 2006; Ruskin, 2006; Vallier, 2010; van Niekerk. 2006). Additional articles are from the National Information Standards Organization (2004), journals pertaining to archival science, and various chapters from edited publications such as The Cybercultures Reader (2003), Multimedia: From Wagner to Virtual Reality (2002), Networked Publics (2012), and The DAM Book (2006). The literature review also includes digitally published white papers and other relevant articles from peer-

reviewed academic journals. Social aspects of the research are influenced by scholars including McLuhan (1964, 1967), Bakardjieva (2003), Hardin (1977), Robins (1999), boyd (2008), Jenkins (2006), and Vallier (2010).

If deemed necessary through further research, this review will additionally include articles and perspectives of archivists, ethnomusicologists, arts administrations, executive directors, artists, anthropologists, professors, and librarians. While these areas are potentially disparate, many of the academic journal articles published on the matter of archival sciences for artistic endeavors comes from many professionals with different backgrounds. Preserving information is key. There is no one standard for this procedure in a digital environment. There are many standards, and there may not be a solitary correct way to proceed.

There are many standards for metadata and digital media organization. This study will focus on those applicable to cultural and ethnographic documentation. For example, many standards and methods applicable to a large accounting firm would not be best suited for ChinaVine. Reasoning for this includes the type of media contained within the archive, and the purpose of that media. Digital media created for an accounting firm may be quite different that the media created for cultural research published on http://chinavine.org. In turn, the digital media/asset management strategies employed for the information may have different requirements. Such requirements include intellectual property rights, security measures regarding who has access to information and ability to modify and edit existing

content, and procedures for publishing finalized information. Furthermore, in ChinaVine's case, some media is published through social networks and third-party websites including SoundCloud, Flickr, and Vimeo.

Research Methodology

The purpose/intent of this experimental research project is to study and test solutions to disorganized digital media within cultural research initiatives. There are many standards for this type of digital organization that can help such research-based initiatives. A digital media management (DAM) system is in development for ChinaVine. The development of a DAM system is a daunting task due to the abundance of content and contributors to the ChinaVine project. However, once a streamlined DAM system is in place, the workflow among researchers around the world will be much more efficient. According to Krogh (2006), “The benefits of your DAM system include aiding your productivity, adding value to your photos, ensuring the longevity of your work, increasing profitability, and allowing you to adapt the changing technological landscape” (p. 20). Due to ChinaVine's high capacity of digital media and fieldwork documentation, a digital asset management system is necessary to organize and research the existing wealth of material.

Although this research project is not exactly situated within the few methodological paradigms presented in Creswell's 2011 publication, Research Design: Qualitative,

Quantitative, and Mixed Methods Approaches, both quantitative and qualitative research methods can be employed. Creswell discusses quantitative methods by stating, “The reduction to a parsimonious set of variables, tightly controlled through design or statistical analysis, provides measures or observations for testing a theory. Objective data result from empirical observations and measures. Validity and reliability or scores on instruments lead to meaningful interpretations of data” (p. 145). This research project is quantitative by a few measures.

First, there are objective requirements necessary to certain metadata standards applied to the ChinaVine archive. Such standards are listed by Dublin Core, IPTC, and the Library of Congress. Not all of these standards serve the same purpose, and the objective of testing on the ChinaVine archive is to determine which standard best meets the mission of ChinaVine, and suits the digital content stored on the archive. Comparative analysis of metadata standards and organizational structures will be conducted in relation to certain capacities of ChinaVine. For example, will the structure and standards be applicable to all media contained within the ChinaVine archive including video, photographs, text, and audio recordings? Will the employed methods required too drastic of a change to the ChinaVine archive? That is, would employing a particular standard to the ChinaVine archive be infeasible due to resources or physical capacity?

Second, the possible standards and organizational structures must be tested for

compatibility with ChinaVine's third-party media hosts. Employing third-party media hosts allows the ChinaVine website to utilize less storage space, and is in turn a cost-effective solution for providing access to digital media online to various internet connections. If a particular metadata standard is incompatible with media hosts such as Flickr, Vimeo, or SoundCloud, the standard in question may be ruled out for application to the ChinaVine archive.

Solomon (2010) explores the proliferation of metadata, its many roles, and how to approach a transformative digital asset management strategy. McIntyre (2010) supports this exploration with a detailed account in her article Building a DAM, One Brick at a Time. McIntyre's article is a real-world account of implementing a DAM in a creative environment, which did not come without failure. McIntyre breaks down her explanation into specific sections: discovery, selection, implementation, launch, launch again, launch yet again, and momentum. The three launches allude to mistakes and failures of the first two DAM systems implemented, and McIntyre provides explanation of how these failures occurred, and how their team solved the problems. Such strategies demonstrated by Krogh, McIntyre, and Solomon will be employed in testing implementations of aforementioned standards and organizational methods to the ChinaVine archive.

Returning to Creswell, qualitative research is discussed and defined in multiple capacities. Creswell states, “Qualitative inquiry employs different philosophical assumptions; strategies

of inquiry; and methods of data collection, analysis, and interpretation. Although the processes are similar, qualitative procedures rely on text and image data, have unique steps in data analysis, and diverse strategies of inquiry" (p. 173). The diversity of qualitative research procedures range from social justice thinking, to ideological perspectives, to philosophical stances, to systematic procedural guidelines (Creswell, p. 173). In many ways, this research project will be qualitative in that I as the researcher am a key instrument in the process. Creswell writes, "Qualitative researchers collect data themselves through examining documents, observing behavior, or interviewing participants" (p. 175). Although I will not be observing behavior or interviewing participants, I am primarily examining existing documents in regards to digital media management, and applying the methods, ideas, and standards publicized in such documents through small-batch testing to duplicated sections of the ChinaVine archive.

This research project continues to align with Creswell's qualitative procedures in that and emergent design is employed throughout the process. Defining emergent design, Creswell writes, "This means that the initial plan for research cannot be tightly prescribed, and all phases of the process may change or sift after the researcher enters the field and begins to collect data" (p. 175-176). After all, the recommended digital media management procedures will be tested in small-batches to the ChinaVine archive, and then will be examined through practical circumstances of publishing through the ChinaVine website and third-party media hosts. I cannot necessarily determine all impacts of such procedures ahead of time

accurately without thoroughly examining the impacts across all public and private aspects of the ChinaVine project.

Furthermore, there is a social aspect to the ultimate results of this research project that cannot be quantitatively determined. Much of these social aspects draw on literature from Jenkins, Bakardjieva, and others following the same avenues of thought. Will this benefit future researchers by providing better access and searchability within the ChinaVine archive? Will researchers be able to find content on the archive without having to hunt and peck through years of content? How will public users understand the employed digital media management system? Will they be able to follow necessary steps to uphold the integrity of such a system?

Research Design

This research study aims to study and improve current digital organization methods of ChinaVine's multimedia resources on the Drobo with hopes similar strategies and digital media management techniques are applicable to other related cultural research initiatives or organizations. I intend to re-evaluate the current terms used as tags and develop a pre-determined list of standardized terms so that future researchers can efficiently organize and label media according to an organized system. One method to accomplish this is taking a day of fieldwork and creating a controlled vocabulary containing key terms that contextualize the

content if an individual were searching for it within an archive. There are different approaches and tools to created a controlled vocabulary. One such tool is Adobe Bridge, another would be the Annotator's Workbench by the EVIA Digital Archive Project. These tools will be defined and examined in later sections on understanding the ChinaVine project as a whole and organizing digital media pertaining to the project.

Open source tools would be the most desirable, as they are freely available to new researchers and students wishing to participate in the ChinaVine project. If an open source tool were to be found to control such a management technique, that would be ideal for ChinaVine. Other considerations, such as the robustness of the tool (for example, Adobe Bridge is a very robust program integrating with many other Adobe products) will be taken into account as far as metadata support, backward compatibility, and integration with alternative software. Again, in most cases, open source software is the best option for this sort of item due to programming being freely available to the public for study, porting, and improvement.

If the purpose of this research were to find an employable digital media management strategy for the ChinaVine archive and proceed through full implementation, it would take a far greater amount of time than what is possible for the scope of this project. Instead, this research project is a springboard for the ChinaVine project to future-proof collection methods for digital media while abroad.

Certain ethical issues present themselves when dealing with digital media management due to intellectual property restrictions and international internet policy. These are two limitations of the research project. Regarding the first, intellectual property, all original content produced by ChinaVine is available under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported license. This means individuals wishing to cite, utilize, or remix ChinaVine's public media can do so as long as they attribute ChinaVine as the original author, they use the work for a non-commercial purpose, and they share their new creative work under the same Creative Commons license. ChinaVine has worked with Diane Peters, Creative Commons General Counsel in Portland, Oregon, to develop the public Creative Commons statement found at http://chinavine.org/creative-commons/.

In regards to international internet policy and how metadata standards and organizational structures are compatible with media hosts and users in China is difficult to determine. Incorporating this scope into the research project would greatly increase the difficultly and time for completion. Furthermore, a fluent understanding of Mandarin Chinese would be necessary. While there are ChinaVine team members that are fluent in Mandarin and help dissolve language barriers, incorporating testing for Mandarin Chinese, Chinese media hosts, and other foreign political concerns is outside the scope of this project if the research is to be completed in a timely manner. Perhaps a small amount of successful examples of digital media management for ChinaVine's content can be applied in this capacity toward the end of

the project.

While conducting this research, I learned efficient, productive digital organization methods and techniques applied to culturally based digital research materials. This research aims to benefit the future of ChinaVine, and potentially other related organizations, by providing a structure to be used as guidelines for future organizers of the Drobo or a similar archival project.

Data Collection and Analysis Procedures

A reflexive data collection process is employed using specific standards and testing on small batches of content in the ChinaVine archive. No human subjects are involved. By comparing the pros and cons of various organizational structures, my research reports which organizational system works most effectively. Member checks are conducted by ChinaVine team members regarding the suitability and compatibility of successful organizational structures applied to ChinaVine's digital media. A breakdown of all media types, size specifics, and other information on the ChinaVine archive to be tested are found in appendix A.

Appendix B shows the current textual representation of the ChinaVine Drobo. Each line represents an individual folder or file on the ChinaVine archive. Not all of these files have

discrete, formulated nomenclature denoting the author and context. In some cases, these files do not have proper EXIF data due to the photographer or fieldwork not properly setting metadata on their capture device. My strategies include copying sections of this output, and applying standards found through literature review in small batches, and then comparing the findings and their benefits and drawbacks in relation to the ChinaVine project.

The end of the research project includes asignificant amount of digital media on the ChinaVine Drobo organized with discrete file names in a coherent, consistent folder hierarchy. Additionally, all years of fieldwork and research are copied to a server in the Digital Scholarship Center for cataloging and publishing with the University of Oregon Library. Determining the best suited nomenclature and organizational structure specific to ChinaVine's digital media is the first goal of the research project, followed by implementation of such a strategy. These findings will also be validated against current and historical literature on digital media management and archival practices. Ultimately, a successful digital media management plan will benefit past, current, and future ChinaVine researchers through efficient searching of the archive, accurately labeled media with complete metadata, and the ability to store ChinaVine's fieldwork in full within a larger private or public archive such as the Library of Congress or the University of Oregon Digital Collections.

Understanding ChinaVine as a Whole

The ChinaVine project officially began conducting fieldwork in 2007. My first exposure to ChinaVine was 2009, spring semester at the University of Central Florida in Dr. Kristin Congdon's Aesthetics course. This course was a required component of the undergraduate Philosophy degree. At the time, ChinaVine was in need of undergraduate researchers to learn the ropes and begin researching various topics on ethnic minority populations in the People's Republic of China. In 2010, the mission was “to educate English-speaking children, youth, and adults about the material and intangible culture of China.” ChinaVine's current stated mission “is to educate English-speaking/reading children, youth, and adults about China's cultural heritage. This mission is achieved through this interactive website along with a variety of social media platforms” (http://chinavine.org, 2014).

The mission has not drastically changed, although the organizational process for collecting research to fuel this mission is drastically different than 2010. Since the project's beginnings in 2007, an uncounted amount of students and professional researchers have contributed to ChinaVine. Prior to 2011, the ChinaVine research teams that endeavored to conduct fieldwork on ethnic minority populations throughout China had an organizational strategy, but it was not exactly coherent. For example, there are many problems with the ChinaVine archive from old students. These problems mostly consist of different strategies for organizing information across the years.

Until 2011, no consistent organizational structure for collecting media from fieldwork was in place for the ChinaVine project. The history of fieldwork is as follows:

- May 2007 in Shandong Province
- March 2008 in Shandong Province
- May 2008 in Beijing
- March 2008 in Guizhou Province
- September 2009 in Beijing
- September 2010 in Beijing & Shanghai, primarily focused on Songzhuang
- May 2012 in Dali, Yunnan Province, primarily focused on the Rao San Ling Festival
- June/July 2013 in Inner Mongolia

The following sections focus on media collection, organizational practices, and metadata records rather than the ethnographic aspects of the documentation. These practices for digital media management are arguably different than those employed by documentarians in other fields. From May 2007 through September 2010, each research trip employed different collection methods for digital media in the field. The collection methods in question are not consistent between trips. Rather than delineate the differences between each, it is more important to focus on general principles that were not utilized during research.

A syntopical analysis (Adler & Van Doren, 1972) of recorded media from 2007-2010 shows no

consistent methodology between ChinaVine research trips. In many cases, much of the material is unedited and contains a great deal of content that could be categorized as “tourism” rather than anthropological research. If this material is to be taken seriously by a library or digital archive, this type of material must be edited before any collective contribution can be made. If the goal is to retroactively make ChinaVine's collection of anthropological documentation publicly available for learning and academic research, it would take a team of people an inordinate amount of time to meaningfully reorganize the collection.

A large majority of ChinaVine's media collected from 2007-2010 was stored on the Drobo without a level of contextual metadata that would be meaningful for future researchers and archivists. For example, from 2012 to 2013 a copy of the Drobo was worked on at the Digital Scholarship Center (DSC) by a specialist in Chinese history in an attempt to reorganize the material so that it would be useful to the DSC. Project tracking forms were created and mostly completed in an attempt to track the progress of older research projects after the fact. However, due to the often temporary nature of researchers contributing to the ChinaVine project, it is difficult to accurately complete these forms without their input. Nonetheless, the project tracking forms included the following information:

- Project Title and Geolocation
- Date Entered in the System
- Supervising editor & Co-Editors

- Original URL:
- Media Format (e.g., Text, Video, Photos, Audio)
- Edited/Unedited with log notes
- Drobo Backup Location
- Published Production Materials Location
- Relevant Social Media Platforms & Dates Published
    - Including profiles on Twitter, Facebook, Sina Weibo, Tudo, Soundcloud, Vimeo, Flickr, and Instagram
- ChinaVine.org Website Categories
    - Any of the following: Art, Artists, Place, Participate
- ChinaVine.org Website Sub-Categories:
    - Any of the following: Architecture, Dance, Fibers, Literature, Music, Theater, Festivals, Visual Art
- ChinaVine.org Website Project Pages:
    - Status (edited/unedited and date published) of Text, Video, Photo, & Audio for the Artist at Work, Artist Gallery, and Cultural Heritage sections specific to individual projects on the website
- Tags in use on ChinaVine.org
    - These tags include terms such as community, work, play, home, food, transportation, traditions, and cultural heritage. For a more complete list of tags in use on the website, please see the Popular Topics section on the

http://chinavine.org homepage.

Despite extensive knowledge about cultural sites in China, the extensive amount of unedited and obscurely labeled media led to great difficult processing the collected documentation. Various collection methods and old, incomplete project files created an abundance of not only duplicate media, but confusion between published and unedited material (via various saved stages of project development without notation), and incomplete information on basic topics such as location, author, and event.

Even so, a wealth of published material came from these years of fieldwork. Simply because future researchers may look back on the information and not understand does not mean the media was not a part of meaningful documentation at the point of capture. The issue is that once those researchers have moved on from the ChinaVine project, future archivists processing their older collections cannot be sure of the meaning behind the media. Despite this issue, the collected media was not alien or functionally corrupt. It is in fact quite accessible through the proper channels (i.e., physically plugging into the Drobo at the University of Oregon). Yet the process becomes complicated when another team member looks at this documentation in an attempt to process and organize media so that it is searchable and coherent to someone unfamiliar with the project.

New Organizational Strategies

In May 2011, research began on organizational principles and metadata for future ChinaVine fieldwork. A critical look at the existing organizational structure on the ChinaVine Drobo compared to current research and practices for publishing and archive born digital fieldwork documentation revealed already obvious inconsistencies in previous documentation strategies.

Beginning on the May 2012 research trip, consistent methodology for media collection was initiated. This included collaboratively written documentation prior to the trip by the researchers. This document was titled the Content Acquisition and Management Plan (CAMP) for ChinaVine.org. Included in this document are notes on pre-trip preparations, instructions for fieldwork in China, procedures for file organization and naming, information on media formats and technical requirements, post-trip information for content delivery and archiving, and finally materials regarding finished publications. The CAMP document was used for both the May 2012 and June/July 2013 fieldwork endeavors with minimal modification. The template was nearly identical between both trips, and validated by archivists and librarians associated with the ChinaVine project.

Sections for pre-trip preparations include media assignments and a running equipment inventory for each individual recording any type of media. Media assignments completing a personal inventory of recording equipment, ensuring the group is working as a team to cover fieldnotes, photography, videography, and audio recording when applicable. Depending on

the available equipment and number of researchers, the fortunate situation may arise where all bases are covered and multiple researchers are documenting with the same medium. Project tracking forms, covered in detail in a later section, ensure consistency between researchers in the field regarding individual responsibilities.

The section pertaining to research in the field includes material on individual responsibilities, metadata, general guidelines regarding media during documentation, and instructions for media transfer while abroad. Depending on the nature of the trip, specific information contained in these sections is subject to development and change depending on the needs of the team.

Regarding individual responsibilities, each researcher is in charge of keeping their own media in an organized form for ease of transfer upon return to the United States. This includes setting metadata correct on each device and regularly checking to ensure the data remains accurate. Digital cameras and camcorders have the ability to store contextual and technical metadata the moment content is recorded. Keeping this information accurate ensures a wealth of meaningful context for any researchers reviewing the material that may not have been on the trip.

Examples of metadata stored within a digital recording device at the moment of capture may include date, time, dimensions, device make and model, color space, focal length, alpha

channel, red eye reduction, F-stop, exposure time, and GPS information. In the case of camcorders such as the Canon XH-A1 and Panasonic AF-100 (both employed over the span of ChinaVine's existence), timecodes can be synchronized at the beginning of a particular shoot with multiple cameras. Correctly setting the metadata functions on a device not only makes editing and much publishing much more efficient, but also increases use, value and ownership of collected digital assets. Descriptive metadata meeting standards for archival documentation is appended to documentation materials and described in the post-trip section of the CAMP document.

Guidelines regarding media during documentation include preferences set by the research team pertaining to the general mission and vision for their fieldwork. Based on the goals collaboratively set by various ChinaVine researchers, the emergent parameters for documentation included:

- Being cognizant of the camera angles and positions of other individuals during field work is a must. Breaking the fourth wall is not highly discouraged, but it can distract from the professional documentary aesthetic depending on the current fieldwork environment and vision for published material.
- While video is recorded, refraining from documentary practices that create changes in light sound, such as flash photography with a noisy DSLR camera body.

Flashes and shutter sounds are generally disruptive to interviews and those viewing published material. Imagine watching a documentary video with camera flashes and audible

shutters firing. Wouldn't this be a distracting scene? The same can be said about individuals milling about and causing potential distractions in-frame during filming and photography.

Additionally, a video exemplifying and narrating best and worst documentation practices was created and shared with the 2013 ChinaVine research trip prior to the fieldwork in Inner Mongolia. This video demonstrated lessons learned from the 2012 endeavor to Dali, Yunnan Province, where the Rao San Ling festival held by the Bai ethnic minority population was held.

Following general guidelines during documentation, a section on media transfer unpacks protocols for redundant collection abroad. This section is arguably more important than individual behaviors during documentation. Based on experience, nearly 90% of documented material does not make the final publication. Much of the aforementioned content such as distract camera flashes and shutter sounds can be edited and removed after the fact. Even so, this information is vitally important during critical fieldwork scenarios with only one chance to document an important cultural event.

From 2011 forward, all documentation was recorded directly to Secure Digital (SD) memory cards, with the exception of one Canon XH-A1 recording to MiniDV cassettes. Sans the MiniDV cassettes, capturing media directly to an SD card allows for daily redundant backups of collected material. MiniDV tapes require real-time copying (i.e., the tape must roll as the

computer copies the footage), thus making daily backups nearly impossible while traveling. SD cards, however, are backed up in minutes. Backing up data on a regular basis ensures protection from data lost should a hard drive, tape, or memory card failure.

Ideally, individual researchers would separate their personal interests from research-related materials before copying media to the traveling external backup hard drives. However, this is not always the case, especially from older research trips where video documentation occurred only with cameras recording to MiniDV cassettes. The CAMP document politely requests personal media to be stored on an individual's computer or storage device before transferring to the backup drives. Alas, due to the fast-paced nature of anthropological fieldwork abroad this is quite the task to ask of researchers.

At the end of each day of the 2012 and 2013 ChinaVine research trips, I would collect each team member's SD card and copy the contents to both external hard drives. After copying the information, the media would be processed in batches with Adobe Bridge to rename the files. The folder hierarchy is as follows: Date, Researcher, Media Type, Buckets of Media. Buckets are dependent on the media being collected. For example, with the Panasonic AF-100 the video is written to an SD card in the AVCHD proprietary file format. While it is difficult to stay away from proprietary formats, there is nothing inherently wrong with the AVCHD model. One difficult aspect of working with AVCHD media is the video cannot be separated from the folder hierarchy created by the camera's internal software when recording video. If the media

is separated, it is likely to be corrupted and unusable by video editors.

Section three of the ChinaVine CAMP document outlines file naming and organizational practices during fieldwork. Discrete file names according to the DATE_INITIALS_TOPIC formula is applied to all media (text, photos, audio, and video) throughout the time spent abroad. At the end of each day/week when redundant copies of collected media are created, the Batch Rename tool in Adobe Bridge is used to apply the naming formula to individual files. There are other options for batch renaming that do not require an internet connection of expensive software package to utilize. Examples of free and commercial software include Apeture, Autormator, GNOME Commander, GPRename, Krename, Métamorphose, AlgoLogic Batch File Rename, and Bulk Rename Utility (Wikipedia, 2014). Of course, by the time this paper is available for reading this list will likely be outdated.

The CAMP document's fourth section includes information about media formats and technical specifications when creating digital documentation abroad. Critical information about differences international line voltage standards is included in this section. General information and electricity in China (and other areas of the world) varies in important ways between countries. Over 30 countries (including those in North America) use a voltage of 110V-130V/60Hz. Another 120 countries (including most of Europe and China) use a voltage of 220-230V/50Hz. The electricity in China is generally 220V/50Hz (Taiwan, however, is 110V/60Hz). When traveling internationally, varying shapes and sizes of electrical sockets are

often encountered. Due to these differences, a portable plug adapter compatible with a wide range of electrical outlets is often necessary. It is interesting to note, however, that many outlets in China simultaneously support type A, C, and I electrical plug types. Type A is used in the United States, and Types C and I are used throughout China. Even so, it is critical to note that voltage in China is always 200 V, and power cords with type A plugs rated only at 110, 120, or 125 V (rather than 110/220 V) must not be used. Following this, there are three sections regarding technical specifications for images, video, audio, and fieldnotes.

For the 2012 and 2014 ChinaVine research trips, image files were requested to be taken at the highest reasonable resolution resolution possible by the camera. The format should include a raw image file with an XMP sidecar, or the highest resolution .jpg possible for the camera.

Video format for ChinaVine fieldwork was dependent on the capture device (e.g., MiniDV, AVCHD, .mov files from Apple products, or .avi containers from point-and-shoot cameras). For archival purposes, unedited video files should be delivered in an .mp4 container in the highest reasonable resolution captured at (minimum) 30 frames per second. If the capture device does not support 1080p (1920x1080 pixels), 720p (1280x720 pixels) is an acceptable alternative. If 720p is not available, 480p is a possibility. However, 480p is not considered high-definition material. If the capture device does not encode video with the H.264 codec (an .mp4 file container), the video can be transcoded with tools such as Handbrake, Adobe Media Encoder, or Compressor at a later date.

Audio should be recorded in the highest possible quality. Acceptable formats for ChinaVine's archival purposes are .wav and .aiff. Encoding audio with the Advanced Audio Codec (AAC) will prevent the need for transcoding audio at a later date, as AAC is compatible with Vimeo where the majority of ChinaVine's published media is hosted. The minimum data rate for audio recordings should be 320 kbps (kilobits per second) and the minimum sample rate should be 44.1 kHz. Higher data and sample rates for audio are encouraged for archival purposes, but the aforementioned rates are the maximum supported by Vimeo (where ChinaVine currently hosts published videos). The .mp3 format is discouraged for archival purposes due to lossy transcoding.

Regarding fieldnotes, there is a document titled 'cv_fieldnotes_log', hosted on the Chinavine Google Drive account, which is to be printed or digitally saved and brought on the research trip. Each artist visit/documentation site should result in a completed cv_fieldnotes_log that keeps track of all materials and media being produced. Fieldnotes should be submitted to one person following the end of a documentation session responsible for saving the forms along with the signed, required IRB documents.

Additionally, there is a “Tracking and Fieldnote Guidelines” document also hosted on the ChinaVine Google Drive account. This document outlines seven steps to ensure the fieldnotes are consistent with broader Project Tracking Forms. The guidelines are as follows:

1. Field notes are to be filled out in hard copy on site, and entered into the ChinaVine Google docs, digitally, as soon as possible, by the note taker, videographer, recorder, or photographer completing the form.
2. Blank fieldnotes template should be opened in Google docs, data entered, and saved as a new separate file as: 'date_location_artist/artform'
3. By clicking on the drop down arrow to the right of the file, once saved, categorize the file as: 'year_fieldnotes_location'
4. Once field notes are complete and project is assigned to an editor/co-editors, track progress in Project Tracking Form. Fill in Title, and date entered into system, and as project progresses, check appropriate cell.
5. Save as a new separate file as: 'year_Location_project title'
6. By clicking on the drop down arrow to the right of the file, once saved, categorize the file as: 'tracking forms_open'
7. Once project is completed, categorize as: 'tracking forms_closed'

Lessons Learned and Future Suggestions

The fifth and final section of the Content Acquisition and Management Plan pertains to information regarding post-trip procedures for the team. Despite a rather comprehensive CAMP document for primarily student researchers, there are still problems with the strategy and lessons to be learned from the past two years of documentation and collecting media on ethnic minority populations in China. Current post-trip processing methodology for

ChinaVine's digital media is no longer with consistent with the latest version of the CAMP document. Although the document is highly useful in the field, it does not necessarily conform with organizational strategies that are standardized for wide-scale use, such as a library.

Recent meetings with Karen Estlund and Julia Simic at the University of Oregon Digital Scholarship Center led to the development of a new set of procedures. While these procedures are always subject to change, and like much of the information in this report, will likely change shortly after publication. The new document is titled ChinaVine Curation Instructions, and includes a Chart of Definitions on Category Notes and Procedures per Category. Definitions on categories are as follows:

1. Published materials: all photos/images that are featured in posts on the ChinaVine website
2. Contextual materials: Unedited materials that provide additional context to the “published materials” category; an example would be multiple unused shots from a fieldwork visit to an artist that help contextualize an image/gallery featured in a post.
3. Supporting materials: Includes Artist/Art forms not necessarily currently published on the website that document an artist, art form, or event not published on ChinaVine yet connected to a fieldwork trip
4. Random/various fieldwork images: this is the least important category of fieldwork documentation, and is intended to allow for a set of images that have direct

connection to fieldwork situations/trips but do not constitute coherent bodies of documentation (and related metadata) focused on specific artists, art forms , or events. They might help contextualize locations or sites, but do not stand on their own in any of the above three categories.

5. Administrative/project history (2nd priority): materials in this category relate to the history or biography of the ChinaVine project; e.g., behind-the-scenes and social images of team members at fieldwork sties, images from meetings with academic and governmental partners, etc.

Procedures per category are largely similar except for file names and folders. The instructions are as follows:

- Published Materials
    - Select files from published categories and move into “published_materials” folder
    - Rename files [trip]_[site]_pub_[serires#].ext
- Supplemental materials
    - See list of media and move relevant items into “supplemental_materials” folder
    - Re-name files [trip]_[site]_sup_[series#].ext
- Contextual Materials
    - Look at what is left (sorting into contextual and administrative)
    - Move into “contextual_materials” folder
    - Rename files [trip]_[site]_con_[series#].ext

With this framework, the team enters appropriate metadata at the folder level, which in turn

is able to be indexed and identified in machine-readable code within a networked environment. Such an environment allows ChinaVine, and other organizations struggling with digital media management to organize their materials contextually, but also in such a way that is quantifiable. Furthermore, the plan fits within the initial research design requiring pre-determined lists of standardized terms, using open source tools to achieve the goal (or in this case, the information is able to be created with open source tools then imported into a proprietary system), keeping the information under Creative Commons licensing, and allowing creators greater access to raw materials for their own research and use.

Initial problems discussed in the earlier sections of this research paper allude to the deterioration of a physical archive. However, the physical is just as much present in this project as is digital, machine-readable information. Without the physical storage devices and interfaces used by people to process the information, this project would not exist. Six full copies of ChinaVine's digital media collection consumes physical space too, and the hardware needed to transfer the information is just as important as how the media is stored. Using the information presented with the proposed data structure, the ChinaVine team is able to estimate growth and necessary physical means for future sustainability.

Copies of ChinaVine's media collection are now stored in networked digital media management system that allows content to be searched through a stable, scalable, standardized platform. This platform openly presents a digital archived that is networked

with many other components of the University of Oregon Library's digital media collection. Rather than videos, images, text, and fieldnotes spread across multiple websites and third-party hosting services, the media collection is unified in a cohesive system under one domain. Instead of research requiring information that is both hard to find physically and virtually, transferring a copy of the materials with standardized metadata allows the media to found as easily as any other material within the Digital Collections section of the Library website.

The Content Acquisition and Management Plan extends the notion of networked information in a digital environment by maximizing compatibility with software platforms, interfaces, and metadata standards. Although the document needs consistent updating, if it is kept current with fieldwork practices and utilized technology, it will serve to ensure quality materials in a variety of ways. If the procedures in the plan are followed, media will be labeled, duplicated, and safely stored for the duration of the trip, and expedites input when proposing a collection of digital materials to be housed within a larger institutional system. Additionally, if there are multiple researchers with various media devices, it is a hard-coded set of instructions to make sure all media and metadata results are accurate and cohesive.

With a system that does include such an organizational strategy, a media collection will likely be deemed unusable for archival purposes. Without purposeful digital media management, information is unreadable and meaningless to human beings who do not have the rich

understanding of an experience provided when one is present. The key is to be aware that this information is critically important to preserving information for meaningful purposes, and that once set and stored, can be copied infinitely through a networked digital environment.

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Appendix A: Tracking Project Growth

The following list contains current figures for each folder containing raw content from individual research trips from 2012-2007 respectively. Please note that in the midst of reorganization, numbers for individual file types may be approximated. For example, there are some .avi files leftover in the images folder, and vice versa. The bulleted list is broken down like this: Folder > Total Size > Total Items > Collective File Types > (breakdown of file types) > Individual Folder statistics for audio, fieldnotes, images, video, and others.

- 2012 May
  - 316.75 GB
  - 10,199 items total
  - file types
    - .nef, .jpg
    - .doc
    - .mp4
    - avchd
      - includes.p2, .mts, .mtl, .bdm, .mpl, .cpi, .tid, .tdt, .mrk,
  - Note: Due to nature of AVCHD and individual media transfer, the folders are labeled by photographer/videographer/author rather than 'image' and 'video'. This will eventually change as the information is edited and published. For now, I will list the total size, amount of files, and primary file type contained within each individual's folder
  - 'chris' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/chris):
    - 67.68 GB
    - 419 items
    - primarily video
  - 'docs' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/docs)
    - 6.3 MB
    - 9 items
    - primarily IRB forms and transcription
  - 'edited video' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/edited video):

        - 696.8 MB
        - 3 items
        - primarily consists of rough cuts exported from Final Cut Pro
    - 'emily' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/emily):
        - 3.85 GB
        - 1,018 items
        - primarily photographs
    - 'images' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/images):
        - 6.55 GB
        - 1,624 items
        - primarily consists of edited and published photos from the 2012 May research trip
    - 'jackie' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/jackie):
        - 3.34 GB
        - 1,303 items
        - primarily consists of photographs
    - 'jonathan' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/jonathan):
        - 183.21 GB
        - 578 items
        - primarily consists of raw AVCHD footage
    - 'jordan' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/jordan)
        - 2.71 GB
        - 67 items
        - primarily consists of photographs and Flip Cam footage
    - 'kristin' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/kristin)
        - 901.4 MB
        - 297 items
        - primarily consists of photographs and fieldnotes
    - 'laurie' folder (/Volumes/BlandyDrobo/ChinaVine/2012 May Research Rao San Ling/laurie):
        - 47.81 GB
        - 4,880 items
        - primarily photographs
            -
- 2011 September

        - 84.52 GB
        - 2,578 items total
        - file types
            - .m4v, .mov, .avi
            - VIDEO_TS folders (DVD copy)
            - .cr2, .xmp, .png
        - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2011 September Research/image):
            - 36.24 GB
            - 2,479 items
        - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2011 September Research/video):
            - 43.1 GB
            - 77 items
    - 2011 Field School
        - 53.39 GB
        - 2,350 items total
        - file types
            - .mts, .mp4, .mov
            - .doc, .pdf
            - .jpg,
        - 'fieldnotes' folder (/Volumes/BlandyDrobo/ChinaVine/2011 Beijing Field School/fieldnotes):
            - 193 KB
            - 2 items
        - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2011 Beijing Field School/image):
            - 3.09 GB
            - 1,321 items
        - 'irb forms' folder: (/Volumes/BlandyDrobo/ChinaVine/2011 Beijing Field School/irb forms):
            - 1.4 MB
            - 1 item
        - 'misc' folder (/Volumes/BlandyDrobo/ChinaVine/2011 Beijing Field School/misc):
            - Note: This folder is mostly random images from photographers throughout the trip
            - 4.67 GB
            - 639 items
        - 'project tracking forms' folder (/Volumes/BlandyDrobo/ChinaVine/2011 Beijing Field School/project tracking forms/):

        - 700 KB
        - 1 item
    - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2011 Beijing Field School/video)
        - 45.61 GB
        - 379 items
- 2010 September
    - 249.51 GB
    - 11,268 items total
    - file types
        - .aif, .wav,
        - .doc, .docx,
        - .jpg,
        - .avi, .mov, .mp4,
    - 'audio' folder (/Volumes/BlandyDrobo/ChinaVine/2010 September/audio):
        - 3.79 GB
        - 35 items
    - 'fieldnotes' folder (/Volumes/BlandyDrobo/ChinaVine/2010 September/fieldnotes):
        - 401 KB
        - 8 items
    - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2010 September/image):
        - 37.42 GB
        - 10,339 items
    - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2010 September/video)
        - 208.3 GB
        - 885 items
- 2009 September
    - 99.8 GB
    - 3,008 items total
    - file types
        - .wav, .asd, .mp3,
        - .doc,
        - .jpg,
        - .avi, .mov,
    - 'audio' folder (/Volumes/BlandyDrobo/ChinaVine/2009 September/audio):
        - 11.64 GB
        - 118 items
    - 'fieldnotes' folder (/Volumes/BlandyDrobo/ChinaVine/2009 September/fieldnotes):
        - 98 KB

        - 4 items
    - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2009 September/image):
        - 8.29 GB
        - 2,780 items
    - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2009 September/video):
        - 79.86 GB
        - 105 items
- 2009 March
    - 99.46 GB
    - 4,214 items total
    - file types
        - .jpg, .psd,
        - .pdf, .doc,
        - .avi, .mov
    - 'fieldnotes' folder (/Volumes/BlandyDrobo/ChinaVine/2009 March/fieldnotes):
        - 10.1 MB
        - 4 items
    - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2009 March/image):
        - 12.55 GB
        - 4,135 items
    - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2009 March/video):
        - 86.9 GB
        - 73 items
- 2008 September
    - 31.77 GB
    - 562 items total
    - file types
        - .jpg,
        - .mov, .fcp (project files),
    - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2008 September/image):
        - 184.5 MB
        - 136 items
    - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2008 September/video):
        - 31.58 GB
        - 424 items
        -
- 2008 May
    - 9.58 GB
    - 2,653 items total
    - file types
        - .doc,

        - .jpg, .tif,
    - 'fieldnotes' folder (/Volumes/BlandyDrobo/ChinaVine/2008 May/fieldnotes)
        - 102 KB
        - 2 items
    - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2008 May/image)
        - 9.58 GB
        - 2,649 items
    - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2008 May/video)
        - 0 KB
        - 0 items
        - *Note*: Most of the items that are supposed to be in this folder remain in the 'Videos' folder in the top-most level of the CV Drobo directory. This is a remnant prior to organizing the CV Drobo.
- 2008 March
    - 523.49 GB
    - 12,478 items total
    - file types
        - .doc, .pdf
        - .jpg, .psd,
        - .mov,
    - 'fieldnotes' folder (/Volumes/BlandyDrobo/ChinaVine/2008 March/fieldnotes)
        - 217 KB
        - 4 items
    - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2008 March/image):
        - 9.96 GB
        - 7,533 items
    - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2008 March/video):
        - 522.53 GB
        - 4,940 items
- 2007 September
    - *Note*: This folder contains images from a study-abroad trip by Mike Diaz and Sarah Long. Not an official ChinaVine research trip.
    - 1.53 GB
    - 552 items total
    - file types:
        - .jpg
        - .avi
    - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2007 Sept/image):
        - 1.4 GB
        - 542 items
    - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2007 Sept/video):

        - 127.7 MB
        - 9 items
    - 2007 May
        - 423.42 GB
        - 5,431 items total
        - file types
            - .m4a, .mp3,
            - .doc
            - .avi, .mov, .fcp project files,
        - 'image' folder (/Volumes/BlandyDrobo/ChinaVine/2007 May/image):
            - 8.02 GB
            - 4,282 items
        - 'video' folder (/Volumes/BlandyDrobo/ChinaVine/2007 May/video):
            - 415.39 GB
            - 1,141 items
        - 'audio' folder (/Volumes/BlandyDrobo/ChinaVine/2007 May/audio):
            - 9 MB
            - 4 items
        - 'fieldnotes' folder (/Volumes/BlandyDrobo/ChinaVine/2007 May/fieldnotes)
            - 183 KB
            - 3 items

Appendix B: ChinaVine Drobo Text Output

The current total textual output for the ChinaVine Drobo at UO is a 10.9 megabyte text file with over 10,000 individual entries corresponding to 2.61 terabytes of digital media. The document is hosted on Google Drive for review and comments at https://docs.google.com/open?id=0B6rUKYqPdGfaOGw3Z2d2LUZKTXM

This document, like previous and future Drobo outputs, are saved in perpetuity to determine project growth, synchronicity with the sister Drobo at the University of Central Florida, and progress tracking for this research project.